

1722 #3

CANCELLED
APR 03 2001
PATENT & TRADEMARK OFFICE

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group

Art Unit: 1722

Attorney

Docket No.: BWT0061

Applicant:

John Derek Guest

Invention:

MOULDED PLASTICS TUBULAR
COUPLINGS

Serial No:

09/767,514

Filed:

January 23, 2001

Examiner:

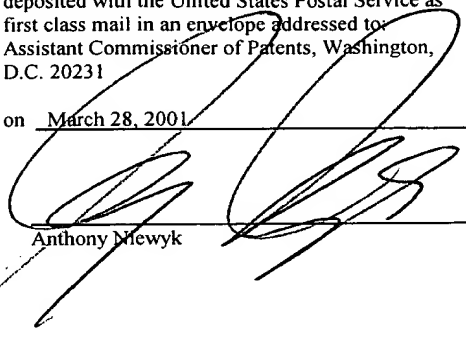
Unknown



Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231

on March 28, 2001


Anthony Niewyk

CLAIM FOR PRIORITY

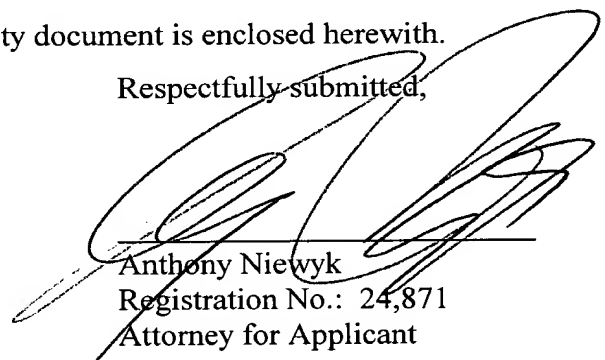
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

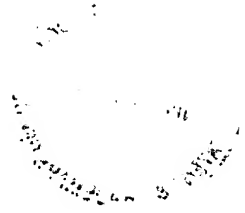
Applicant hereby claims the priority of British Patent Application No. GB0001547.9 filed January 24, 2000, under the provisions of 35 U.S.C. 119.

A certified copy of the priority document is enclosed herewith.

Respectfully submitted,


Anthony Niewyk
Registration No.: 24,871
Attorney for Applicant

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INVESTOR IN PEOPLE



The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Signed

Andrew Gersey

Dated

24 October 2000

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GB0001547.9

By virtue of a direction given under Section 30 of the Patents Act 1977, the application is proceeding in the name of

JOHN GUEST LIMITED

Horton Road

WEST DRAYTON

Middlesex

UB7 8JL

United Kingdom

Incorporated in the United Kingdom

[ADP No. 07934367001]

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Patents Act 1977

(Rule 16)

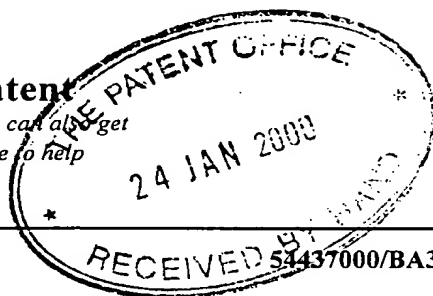
Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

25JAN00 E507647-1 D02882
P01/7700 0.00-0001547.9

The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH



1. Your reference **5437000/BA3221**

2. Patent application number
(The Patent Office will fill in this part)

0001547.9

24 JAN 2000

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)

**JOHN DEREK GUEST
'IONA'
CANNON HILL WAY
BRAY
MAIDENHEAD SL6 2EX
BERKSHIRE**

SECTION 3(1) APPLICATION FILED 29/1/00
1093079001

Patents ADP number (*if you know it*)

If the applicant is a corporate body, give the country/state of its incorporation

UNITED KINGDOM

4. Title of the invention

IMPROVEMENTS IN OR RELATING TO MOULDED PLASTICS TUBULAR COUPLINGS

5. Name of your agent (*if you have one*)

**BOULT WADE TENNANT
27 FURNIVAL STREET
LONDON
EC4A 1PQ**

"Address for service" in the United Kingdom to which all correspondence should be sent (*including the postcode*)

Patents ADP number (*if you know it*)

42001 ✓

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (*if you know it*) the or each application number

Country

Priority application number
(if you know it)

Date of filing
(day/month/year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request?

(Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
 - c) any named applicant is a corporate body.
- See note (d))

NO

Patents Form 1/77

Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form NONE

Description 4

Claim(s) 2

Abstract NONE

Drawing(s) 2 + 2

10. If you are also filing any of the following, state how many against each item.

Priority documents NONE

Translations of priority documents NONE

Statement of inventorship and right to grant of a patent (Patents Form 7/77) NONE

Request for preliminary examination and search (Patents Form 9/77) NONE

Request for substantive examination (Patents Form 10/77) NONE

Any other documents (Please specify) NONE

11 I/We request the grant of a patent on the basis of this application.

Signature


Date

24 January 2000

12. Name and daytime telephone number of person to contact in the United Kingdom BAYLISS; GEOFFREY CYRIL
020 7430 7500

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

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IMPROVEMENTS IN OR RELATING TO
MOULDED PLASTICS TUBULAR COUPLINGS

5 This invention relates to moulded plastics tubular couplings and is particularly although not exclusively applicable to tube end supports for locating a tube end in a tube coupling.

10 My European Patent Publication No. 0756126 discloses a tube coupling comprising a coupling body having a throughway open at one end to receive a tube, the diameter of the throughway increasing towards said open end at a first step to form a first enlarged diameter portion to receive a tube and a second step
15 to form a second enlarged diameter portion to receive a tube locking device to hold a tube in the coupling body. A thin wall sleeve has one end engageable in the throughway and the other engageable in the tube to be located in the coupling body so that, in use, the
20 sleeve extends from the tube past the first step into the throughway. The sleeve has a sealing engagement with the internal diameter of the tube to prevent leakage between the sleeve and tube and the end of the sleeve projecting from the tube has an annular seal
25 with seals with the throughway in the coupling body to prevent leakage between the sleeve and coupling body.

30 My European Patent Application No. 99308504.2 discloses a tube end support for locating a tube end in a tube coupling, comprising a sleeve to be received in a tube, an encircling end stop adjacent one end of the sleeve to limit entry of the sleeve into the tube, encircling gripper means on the sleeve to grip on the internal diameter of a tube to hold the tube on the
35 sleeve and a separate annular seal supported by the end and projecting radially outwardly thereof to seal with the internal diameter of a tube coupling in which

the assembly of the end support and tube are located.

5 This invention provides a moulded plastics tubular coupling having a cylindrical surface to engage with a corresponding surface of another component, the surface having an annular recess therein and a flexible annular diaphragm formed in the recess integrally with the coupling and having an outer periphery extending proud of the cylindrical surface to engage and grip the corresponding surface of another component.

15 In one construction according to the invention the annular recess in the cylindrical surface of the coupling is V-shaped and the flexible diaphragm is formed at the apex of the V to be able to flex towards either side of the V when the coupling is engaged with another component.

20 In a preferred form of the invention the recess and diaphragm are formed on the outer cylindrical surface of the coupling to engage an inner surface of a component to encircle the coupling.

25 More specifically, in the case where the coupling is intended to receive an end of a length of tubing, the coupling may have a sleeve portion having said recess and diaphragm formed around the outer surface of the sleeve portion partway along the sleeve; a tapered portion at one end of the sleeve to facilitate insertion of the sleeve into an end of a length of tubing and an end stop at the other end of the sleeve to limit the insertion of the sleeve into the tube.

35 By way of example the end stop may comprise an annular head formed at said other end of the sleeve projecting outwardly of the sleeve.

In one specific arrangement the head may be formed with means to grip/seal with an encircling component in which the sleeve is engaged.

5 For example the head may have an encircling groove in which an O-ring or similar seal is mounted.

10 In a further arrangement the outer surface of the head may have an annular recess in which a further flexible diaphragm is formed integral with the head and projecting proud of the outer surface of the head to engage and lock the head in the bore of a component in which the coupling is located.

15 The following is a description of some specific embodiments of the invention, reference being made to the accompanying drawings in which :

 Figure 1 is an elevation view of a tube end support for locating a tube end in a tube coupling;

20 Figure 2 is a sectional view through the support of Figure 1;

 Figures 3 and 4 are similar views of an alternative construction.

25 Referring firstly to Figure 1 of the drawings, there is shown a tube end support indicated generally at 10 for locating in an end part of a tube to be inserted in the throughway of a coupling body of a tube coupling, having a locking device such as a
30 collet to engage the tube end and a seal to seal with the tube end. The tube end support comprises a hard moulded plastics sleeve 11 having an annular head 12 at one end thereof. The sleeve has an internal bore 13 having a flared entry 14 at the head end of the
35 sleeve.

 The head 12 of the sleeve provides a radially annular face 15 directed along the sleeve which forms

an end stop to limit insertion of the sleeve 16 into a tube end by engagement with the end of the tube as shown in Figure 2.

5 Midway along the sleeve 10 there is an annular V-section groove 19 in the outer surface of the sleeve in which an annular flexible diaphragm 20 is formed integral with the sleeve. The outer periphery of the diaphragm projects slightly beyond the outer periphery
10 of the sleeve to engage the inner surface of the tube as the tube is forced over the sleeve to grip and seal with the inner diameter of the tube. The tube is thereby retained on the sleeve with a sealing engagement.

15 The end of the sleeve 10 remote from the head 15 has a shallow taper as indicated at 23 around its outer periphery to facilitate insertion of the end of the sleeve in the tube. The head 12 has an encircling
20 annular square section groove 25 in which an O-ring or similar form of seal 26 is mounted to seal with the internal bore or throughway in the coupling body in which the tube end is located.

25 Figures 3 and 4 show a modified form of the tube support in which the O-ring seal and groove 25, 26 are omitted and in their place the head has an encircling V-section groove 27 in which a further annular
flexible diaphragm 28 formed integrally with the head
30 is formed. Again, the outer periphery of the diaphragm projects slightly proud of the outer surface of the head to engage, grip and seal with an internal bore 29 in a component of the tube coupling body 30 in which the tube end support is located.

35

CLAIMS

1. A moulded plastics tubular coupling having a cylindrical surface to engage with a corresponding surface of another component, the surface having an annular recess therein and a flexible annular diaphragm formed in the recess integrally with the coupling and having an outer periphery extending proud of the cylindrical surface to engage and grip the corresponding surface of another component.

2. A tubular coupling as claimed in claim 1, wherein the annular recess in the cylindrical surface of the coupling is V-shaped and the flexible diaphragm is formed at the apex of the V to be able to flex towards either side of the V when the coupling is engaged with another component.

3. A coupling as claimed in claim 1 or claim 2, wherein the recess and diaphragm are formed on the outer cylindrical surface of the coupling to engage an inner surface of a component to encircle the coupling.

4. A coupling as claimed in claim 3, wherein the coupling is intended to receive an end of a length of tubing, wherein the coupling has a sleeve portion having said recess and diaphragm formed around the outer surface of the sleeve portion partway along the sleeve; a tapered portion at one end of the sleeve to facilitate insertion of the sleeve into an end of a length of tubing and an end stop at the other end of the sleeve to limit the insertion of the sleeve into the tube.

5. A coupling as claimed in claim 4, wherein the end stop comprises an annular head formed at said other end of the sleeve projecting outwardly of the

sleeve.

5 6. A coupling as claimed in claim 5, wherein
the head is formed with means to grip/seal with an
encircling component in which the sleeve is engaged.

10 7. A coupling as claimed in claim 6, wherein
the head has an encircling groove in which an O-ring
or similar seal is mounted.

15 8. A coupling as claimed in claim 6, wherein
the outer surface of the head has an annular recess in
which a further flexible diaphragm is formed integral
with the head and projecting proud of the outer
surface of the head to engage and lock the head in the
bore of a component in which the coupling is located.

20 9. A tube support coupling substantially as
described with reference to and as illustrated in
Figures 1 and 2 or Figures 3 and 4 of the accompanying
drawings.

25

JG-78 "NEW STYLE SEALING TUBE SUPPORT"

INVENTOR: JOHN DEREK GUEST

DATE: 11 JANUARY 2000

10 →

FIG 1

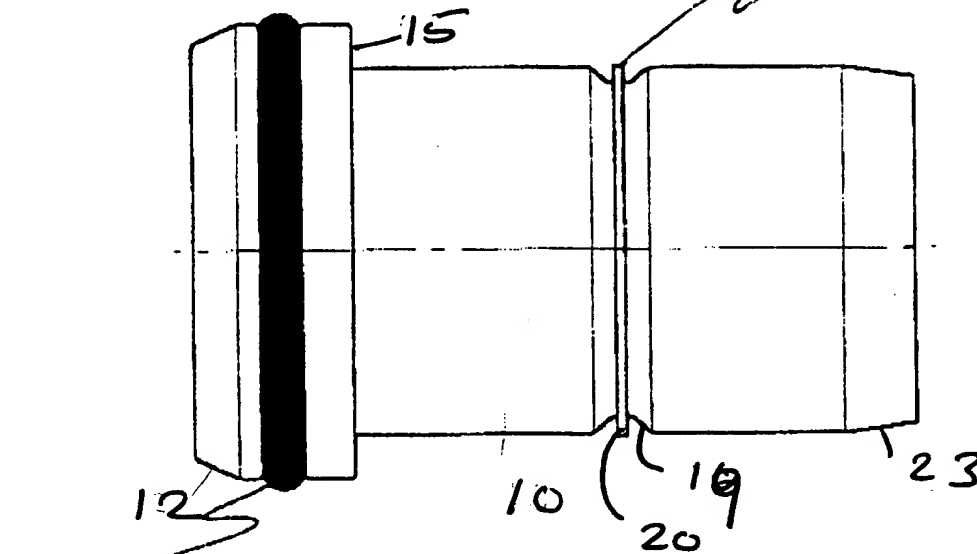
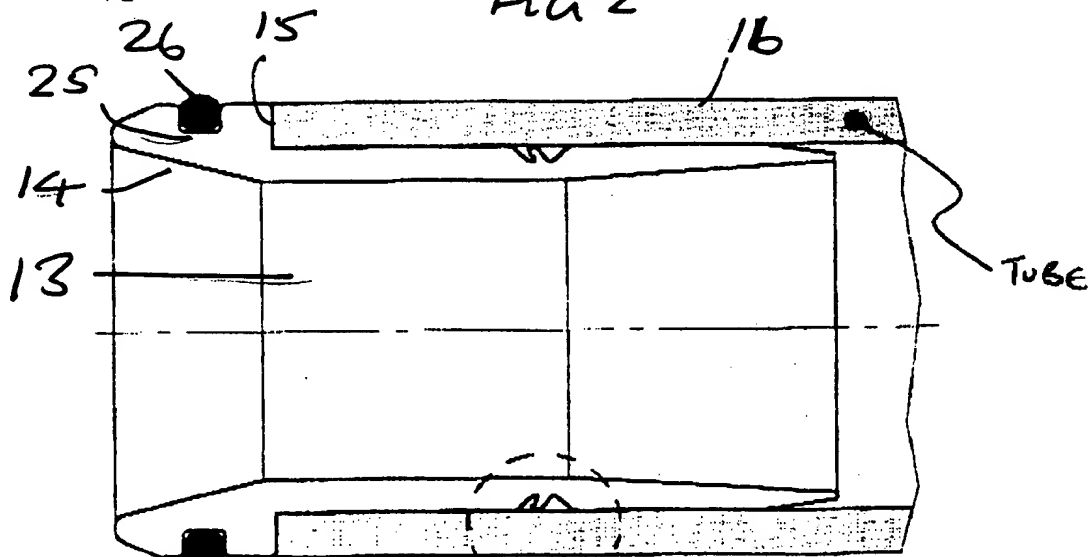
FLEXIBLE
DIAPHRAGMO RING SEAL
OR SIMILAR

FIG 2

O RING OR
OTHER SEALS
ON CONNECTOR
BODY I.D.ON INSERTION
INTO TUBE, DIAPHRAGM
DISTORTS AND THEREBY
GRIPS AND SEALS ON
I.D. OF TUBE.

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Fig 3

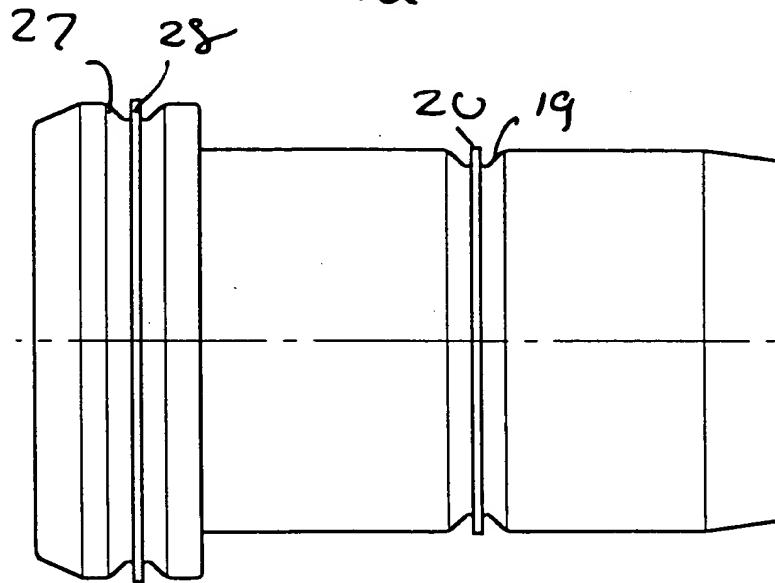
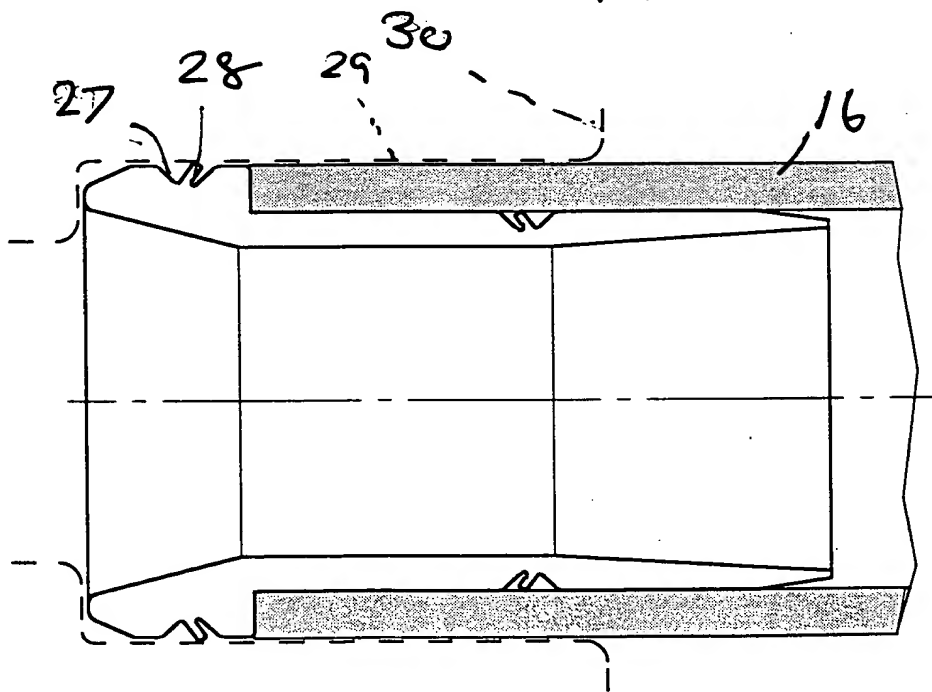


Fig 4



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